

Applicant(s)	Brancato, et al.
Serial No.	Unknown
Filing Date	Herewith
Group Art Unit	Unknown
Examiner Name	Unknown
Attorney Docket No.	118.002US01

**PRELIMINARY  
AMENDMENT**

Title: USE OF UBIQUINONE Q10 FOR THE LOCAL TREATMENT AND PREVENTION OF POST-SURGICAL OPHTHALMOLOGIC PATHOLOGIES (as amended herewith)

Commissioner for Patents  
Box Patent Application  
Washington, D.C. 20231

Before taking up the above-identified patent application for examination, please amend it as follows.

**IN THE TITLE**

Please delete the title and insert thereto --USE OF UBIQUINONE Q10 FOR THE LOCAL TREATMENT AND PREVENTION OF POST-SURGICAL OPHTHALMOLOGIC PATHOLOGIES--.

**IN THE CLAIMS**

Please rewrite claims 1-23 and add new claim 24, as provided below.

1. (Once amended) A method for the prevention and treatment of pathologies, or incidental or post-surgical trauma, of the anterior chamber of the eye comprising use of a medicament comprising coenzyme ubiquinone Q10.
2. (Once amended) The method according to claim 1, wherein said treatment comprises prevention and treatment of corneal haze following corneal trauma, general surgery and refractive surgery; prevention of regression of corrective effects after operation of refractive

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surgery performed by conventional surgery or by laser radiation; and eye protection against damage determined by solar light and ultraviolet radiation.

3. (Once amended) The method according to claim 2, wherein said treatment is directed to protect eye cells against reversible or irreversible damage induced by said surgical operation and, or laser and by exposure to solar and ultraviolet radiation.
4. (Once amended) The method according to claim 3, wherein said irreversible damage of said cells is apoptosis.
5. (Once amended) The method according to claim 4, wherein said cells are corneal stromal keratocytes.
6. (Once amended) The method according to claim 5, wherein said refractive surgery is the photorefractive keratectomy (PRK) and the laser-assisted in situ keratomileusis (LASIK).
7. (Once amended) The method according to claim 6, wherein said photorefractive keratectomy (PRK) and said laser-assisted in situ keratomileusis (LASIK) are performed by laser sources.
8. (Once amended) The method according to claim 7, wherein said laser sources are excimer laser.
- 9 (Once amended) The method according to claim 8, wherein said laser source is a 193 nm ArF excimer laser.
10. (Once amended) The method according to claim 3, wherein said medicament comprises a composition for topical administration to the cornea, including ubiquinone Q10 in a quantity effective to said treatment and a pharmaceutically compatible vehicle.

11. (Once amended) The method according to claim 10, wherein said vehicle is an aqueous solution of a mixture comprising: a block copolymer of hydrophilic ethylene oxide and lipophilic propylene oxide, having a prevailing proportion of polyoxyethylene, an average molecular weight between 10,000 and 13,000 Dalton and a HLB value higher than 15; and a modified castor oil.

12. (Once amended) The method according to claim 11, wherein said copolymer comprises about 70% of polyoxyethylene and has a HLB value of about 22.0

13. (Once amended) The method according to claim 11 or 12, wherein said modified castor oil is polyethylene glycol glyceryl-triricinoleate.

14. (Once amended) A collyrium composition for topical ophthalmic use comprising, as components: ubiquinone Q10 by 0.01 up to 2.0% p/w; tocopherol by 0.005 up to 0.1% p/w; and a mixture including modified castor oil and a block copolymer of hydrophilic ethylene oxide and lipophilic propylene oxide having a prevailing proportion of polyoxyethylene, an average molecular weight between 10,000 and 13,000 Dalton and a HLB value higher than 15, in a quantity sufficient to solubilize said components in an aqueous solution.

15. (Once amended) A composition according to claim 14, comprising ubiquinone by 0.1 up to 1.0% p/w.

16. (Once amended) A composition according to claim 14, comprising ubiquinone by about 0.2% p/w.

17. (Once amended) A composition according to claim 14, comprising tocopherol by 0.01 up to 0.05% p/w.

18. (Once amended) A composition according to claim 14, wherein said modified castor oil is polyethylene glycol glyceryl-triricinoleate.

19. (Once amended) A composition according to claim 14 comprising in an aqueous solution, as components: ubiquinone Q10 by about 0.2% p/w; tocopherol by 0.02 up to 0.04% p/w; and a mixture including polyethylene glycol glyceryl-tryricinoleate and a block copolymer of ethylene oxide and propylene oxide having a proportion of polyoxyethylene by about 70%, an average molecular weight of about 12,000 Dalton and a 22 HLB value by 10 up to 15%.

20. (Once amended) A composition according to claim 14, furthermore comprising, as auxiliary ingredients, pH correctors, buffer salts, antiseptics, complexants, antioxidants, synergizing agents and preservatives.

21. (Once amended) A process to produce a composition as claimed in any of the claims 14 to 20, comprising the steps of: melting the ubiquinone, the tocopherol, the block copolymer and the modified castor oil, at a temperature of 40 up to 80°C until obtaining a melt mass; adding water to the melt mass at the same temperature until obtaining a dispersion; and fully solubilizing said components under stirring.

22. (Once amended) A process according to claim 21, wherein said temperature is 60°C.

23. (Once amended) A process according to claim 21, wherein any auxiliary ingredients are added after solubilization.

24. (New) The method according to claim 1, wherein the use of the medicament comprising the ubiquinone Q10 is for ophthalmic topical use.

**PRELIMINARY AMENDMENT**

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Title: USE OF UBIQUINONE Q10 FOR THE LOCAL TREATMENT AND PREVENTION OF  
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**REMARKS**

Applicant has rewritten claims 1-23 for certain formalities. Because the claims are amended as to form, Applicant contends that such amendments are not related to patentability of the subject matter sought to be protected.

**CONCLUSION**

Applicant has rewritten claims 1-23 and added new claim 24 hereby. Claims 1-24 are now pending. Applicant respectfully requests entry and examination of all pending claims.

The Commissioner for Patents is authorized to charge any additional fees or credit overpayment to Deposit Account No. 501373.

If the Examiner has any questions or concerns regarding this application, please contact the undersigned at direct dial (612) 312-2204.

Respectfully submitted,

Date: 10-9-01



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Once amended) [Use of coenzyme ubiquinone Q10 for the production of a drug for ophthalmic topical use for] A method for the prevention and treatment of pathologies, or incidental or post-surgical trauma, of the anterior chamber of the eye comprising use of a medicament comprising coenzyme ubiquinone Q10.
  
2. (Once amended) [Use of ubiquinone Q10] The method according to claim 1, wherein said treatment comprises prevention and treatment of corneal haze following corneal trauma, general surgery and refractive surgery; prevention of regression of corrective effects after operation of refractive surgery performed by conventional surgery or by laser radiation; and eye protection against damage determined by solar light and ultraviolet radiation.
  
3. (Once amended) [Use of ubiquinone Q10] The method according to claim [1 or] 2, wherein said treatment is directed to protect eye cells against reversible or irreversible damage induced by said surgical operation and, or laser and by exposure to solar and ultraviolet radiation.
  
4. (Once amended) [Use of ubiquinone Q10] The method according to [any of the preceding claims] claim 3, wherein said irreversible damage of said cells is apoptosis.
  
5. (Once amended) [Use of ubiquinone Q10] The method according to [any of the preceding claims] claim 4, wherein said cells are corneal stromal keratocytes.
  
6. (Once amended) [Use of ubiquinone Q10] The method according to [any of the preceding claims] claim 5, wherein said [corneal] refractive surgery is the photorefractive keratectomy (PRK) and the laser-assisted in situ keratomileusis (LASIK).

VERSION WITH MARKINGS TO SHOW CHANGES MADE

7. (Once amended) [Use of ubiquinone Q10]The method according to claim 6, wherein said photorefractive keratectomy (PRK) and said laser-assisted in situ keratomileusis (LASIK) are performed by laser sources.

8. (Once amended) [Use of ubiquinone Q10]The method according to claim 7, wherein said laser sources are excimer laser.

9 (Once amended) [Use of ubiquinone Q10]The method according to claim 8, wherein said laser source is a 193 nm ArF excimer laser.

10. (Once amended) [Use of ubiquinone Q10]The method according to [any of the preceding claims]claim 3, wherein said medicament comprises a composition for topical administration to the cornea, including ubiquinone Q10 in a quantity effective to said treatment and a pharmaceutically compatible vehicle.

11. (Once amended) [Use of ubiquinone Q10]The method according to claim 10, wherein said vehicle is an aqueous solution of a mixture comprising: a block copolymer of hydrophilic ethylene oxide and lipophilic propylene oxide, having a prevailing proportion of polyoxyethylene, an average molecular weight between [10.000]10,000 and [13.000]13,000 Dalton and a HLB value higher than 15; and a modified castor oil.

12. (Once amended) [Use of ubiquinone Q10]The method according to claim 11, wherein said copolymer comprises about 70% of polyoxyethylene and has a HLB value of about 22.0

13. (Once amended) [Use of ubiquinone Q10]The method according to claim 11 or 12, wherein said modified castor oil is polyethylene glycol glyceryl-triricinoleate.

VERSION WITH MARKINGS TO SHOW CHANGES MADE

14. (Once amended) A collyrium composition for topical ophthalmic use comprising, as components: ubiquinone Q10 by [0,01]0.01 up to [2,0]2.0% p/w; tocopherol by [0,005]0.005 up to [0,1]0.1% p/w; and a mixture including modified castor oil and a block copolymer of hydrophilic ethylene oxide and lipophilic propylene oxide having a prevailing proportion of polyoxyethylene, an average molecular weight between [10.000]10,000 and [13.000]13,000 Dalton and a HLB value higher than 15, in a quantity sufficient to solubilize said components in an aqueous solution.

15. (Once amended) A composition according to claim 14, comprising ubiquinone by [0,1]0.1 up to [1,0]1.0% p/w.

16. (Once amended) A composition according to claim 14, comprising ubiquinone by about [0,2]0.2% p/w.

17. (Once amended) A composition according to claim 14, comprising tocopherol by [0,01]0.01 up to [0,05]0.05% p/w.

18. (Once amended) A composition according to [any of the claims 14 to 17]claim 14, wherein said modified castor oil is polyethylene glycol glyceryl-triricinoleate.

19. (Once amended) A composition according to [any of the claims 14 to 18]claim 14 comprising in an aqueous solution, as components: ubiquinone Q10 by about [0,2]0.2% p/w; tocopherol by [0,02]0.02 up to [0,04]0.04% p/w; and a mixture including polyethylene glycol glyceryl-triricinoleate and a block copolymer of ethylene oxide and propylene oxide having a proportion of polyoxyethylene by about 70%, an average molecular weight of about [12.000]12,000 Dalton and a 22 HLB value by 10 up to 15%.

VERSION WITH MARKINGS TO SHOW CHANGES MADE

20. (Once amended) A composition according to [any of the claims 14 to 19] claim 14, furthermore comprising, as auxiliary ingredients, pH correctors, buffer salts, antiseptics, complexants, antioxidants, synergizing agents and preservatives.

21. (Once amended) A process to produce a composition as claimed in any of the claims 14 to 20, comprising the steps of: melting the ubiquinone, the tocopherol, the block copolymer and the modified castor oil, at a temperature of 40 up to 80°C until obtaining a melt mass; adding water to the melt mass at the same temperature until obtaining a dispersion; and fully solubiliz[e]ing said components under stirring.

22. (Once amended) A process according to claim 21, wherein said temperature is 60°C.

23. (Once amended) A process according to claim 21 [or 22], wherein [said] any auxiliary ingredients are added after solubilization.

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